

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (Currently Amended) A method of detecting faults on a digital subscriber telephone-line, the method comprising

comparing measured data transmission characteristics of the digital subscriber line with at least one model, said model(s) modelling expected data transmission characteristics of the digital subscriber telephone-line; and

in response to the comparison, generating a fault alert signal if the comparison between the measured data transmission characteristics and the modelled expected data transmission characteristics differ by more than a pre-determined threshold,

wherein said data transmission characteristics comprise characteristics relating to the transmission of data on the line within a plurality of predetermined frequency bands representing the bin occupancy distribution of discrete multi tones.

2. (Currently Amended) A method according to claim 1 wherein a model models the expected characteristics at a pre-determined data rate associated with the digital subscriber line.

3. (Previously Presented) A method according to claim 1 wherein the comparison involves a goodness-of-fit test.

4. (Original) A method according to claim 3 wherein the comparison involves calculating the Chi-squared statistic.

5. (Previously Presented) A method according to claim 3 wherein the comparison involves comparing the number of zeros in said pre-determined frequency bands for the measured and expected characteristics.

6. (Previously Presented) A method according to claim 3 wherein the comparison involves calculating the sum of absolute difference between consecutive said predetermined frequency bands.

7. (Previously Presented) A method according to claim 3 wherein the comparison involves calculating the number of said pre-determined frequency bands the data for which is less than expected.

8. (Original) A method according to claim 7 wherein the comparison involves calculating the number of said pre-determined frequency bands the data for which is less than 50% of the expected.

9. (Previously Presented) A method according to claim 3 wherein the comparison involves calculating the number of said pre-determined frequency bands the data for which is greater than expected.

10. (Original) A method according to claim 9 wherein the comparison involves calculating the number of said pre-determined frequency bands the data for which is 200% of the expected.

11. (Currently Amended) A method according to claim 1 wherein the characteristics of the digital subscriber line represent the frequency distribution for data transmitted via the digital subscriber line.

Claims 12 and 13 (Canceled).

14. (Currently Amended) A method of generating models for use in a method of detecting faults on a digital subscriber ~~telephone~~-line, the fault detection method comprising comparing measured data transmission characteristics of the digital subscriber line with a model, said model modelling expected data transmission characteristics of the digital subscriber ~~telephone~~-line, and in response to the comparison, generating a fault alert signal if the comparison between the measured data transmission characteristics and the modelled expected data transmission characteristics differ by more than a pre-determined threshold, the model generation method comprising:

receiving data representing data transmission characteristics of a digital subscriber ~~telephone~~-line; and

forming a model which generally represents the received data transmission characteristics of the digital subscriber line,

wherein said data transmission characteristics comprise characteristics relating to the transmission of data on the line within a plurality of predetermined frequency bands representing the bin occupancy distribution of discrete multi tones.

15. (Currently Amended) A method according to claim 14 further comprising forming a model for the data transmission characteristics of the digital subscriber line at a variety of bit rates.

16. (Currently Amended) A method according to claim 14 further comprising forming a model for the data transmission characteristics of the digital subscriber line for a subset of said pre-determined frequency bands.

17. (Currently Amended) A device for detecting faults on a digital subscriber telephone-line, the device comprising:

an input for receiving data from a digital subscriber line to be tested for faults;

a processor for measuring data transmission characteristics of the data;

a comparator for comparing the measured characteristics of the digital subscriber line with a model, said model modelling expected data transmission characteristics of a digital subscriber telephone-line; and

fault alert device for generating a fault alert signal in response to the comparison, if the comparison between the measured data transmission characteristics and the modelled expected data transmission characteristics differs by more than a pre-determined threshold, ~~threshold~~

wherein said data transmission characteristics comprise characteristics relating to the transmission of data on the line within a plurality of predetermined frequency bands representing the bin occupancy distribution of discrete multi tones.

18. (Currently Amended) A method for monitoring quality of a digital subscriber telephone-line, the method comprising:

comparing measured data transmission characteristics of the digital subscriber line with a model, said model modelling expected data transmission characteristics of the digital subscriber telephone-line, the comparison step involving a goodness-of-fit test between the measured data transmission characteristics and the modelled expected data transmission characteristics, wherein said data transmission characteristics comprise characteristics relating to the transmission of data on the line within a plurality of predetermined frequency bands representing the bin occupancy distribution of discrete multi tones.

19. (Currently Amended) A method according to claim 18 wherein, in response to the comparison, generating a fault alert signal if the comparison between the measured data transmission characteristics and the modelled expected data transmission characteristics is statistically significantly different.

20. (Currently Amended) A method according to claim 18, further comprising periodically carrying out the comparison step over a period of time to monitor for changes in the data transmission characteristics of the digital subscriber telephone-line over the period of time.